

Section 12. Documentation and Quality Review Issues

Background

The EN process is highly complex, involving a multistep continuous process, including patient assessment and EN recommendations, prescribing, order review, the selection/procurement of enteral products, their preparation and labeling, and EN administration and monitoring/reassessment. Documentation throughout the EN process is important and provides a source for process evaluation from which to identify gaps in process and outcomes. For example, documentation of the nutrition assessment is core to the process and has a direct impact on patient care.

Question 12.1. What documentation needs to occur at each step in the EN process?

Practice Recommendations

1. Document nutrient requirements, including energy, protein, and fluid, in the medical record within 48 hours of admission.
2. Document data used for nutrition assessment, including nutrient/fluid intake, anthropometric data, weight changes and goal weight, lab work, functional and physical assessment, and any other assessment tools employed. If any data are extrapolated from another clinician's note, such as the physical examination, include from where the information was obtained.
3. Document the EN prescription and ancillary orders using the EHR as appropriate.
4. Document how the recommended EN regimen meets the estimated energy, protein, and fluid requirements initially and any time a different EN regimen is recommended.
5. Provide an EN prescription review mechanism for all clinicians involved.
6. Document the formula selection and preparation through policies and procedures and specifically for each patient in the EHR.
7. Develop and implement EN protocols to improve EN administration in patients.

Rationale

The first step of documentation in the EN process is determination of energy requirements to guide the nutrition plan of care. Wakeham and colleagues¹ performed a chart review in a cohort of pediatric ICUs and found that patients with documented calorie requirement were more likely to receive EN support than those without on each of the first 4 days of admission. Patients with documented calorie requirements had higher total daily energy intake by the enteral route and by the enteral and parenteral route combined. The authors concluded that documentation of calorie requirement in the medical record within 48 hours of

admission is significantly associated with higher total daily energy intake and more frequent use of the enteral route for nutrition. Importantly, in this study, the registered dietitian entered almost all of the calorie requirements that were present early in medical records. Documented protocols can also affect the quality of EN care. Kim and colleagues² performed a literature review to identify major barriers to adequate EN intake in critically ill adults. They found that interruption of EN is often due to avoidable causes such as routine nursing procedures and bedside care. Also, after an interruption occurs, EN may be restarted at a low rate. They suggest that standardized feeding protocols to prevent unnecessary cessation of feedings and restart of EN after interruptions may maximize EN delivery in the ICU.

Question 12.2. What organizational systems/administrative structures need to be in place to support a safe EN process?

Practice Recommendations

1. Provide leadership and oversight at the healthcare organizational level by competent clinicians knowledgeable in the EN process.
2. Develop and implement policies and evidence-based practice guidelines to support the individuals involved in the assessment and care of patients receiving EN.
3. Develop and implement policies and guidelines collaboratively among all disciplines involved in the EN process, and align policies and procedures from various disciplines, departments, and settings within the organization.
4. Create a formal committee or structure that includes expert clinicians from all disciplines to provide oversight of the EN process.

Rationale

Documentation needs to be supported by a strong infrastructure of organizational systems and administrative oversight. The EN process involves many disciplines and departments. An EN process that minimizes risks requires interdisciplinary collaboration, standardization through guidelines, and practice alignment among professions, departments, and settings. Evidence-based practice guidelines targeted at the clinical, departmental, and organizational levels support a safe EN process. Ideally, policies and guidelines addressing nutrition care, nursing care, and physician prescribing are developed to target each discipline's role in the EN process. These guidelines need to be aligned and complementary to avoid inconsistencies. Recent literature supports the use of enteral feeding practice guidelines and feeding algorithms to improve the safety and efficacy of enteral feedings. Gentles and colleagues³ found that introduction of an enteral feeding practice guideline and participation by a dietitian in multidisciplinary bedside rounds

improved provision of nutrition support and overall energy intake. Similarly, Geukers and colleagues⁴ demonstrated that the introduction of a nurse-driven, early EN algorithm and implementation of a nutrition support team safely and effectively increased the nutrition intake of critically ill children during the first few days of an ICU stay.

Organizations can use a governing body or committee composed of a multidisciplinary group of content experts, such as a nutrition committee, to support safe EN practice. This group can be charged with reviewing and approving guidelines and identifying educational programs and strategies to disseminate evidence-based guidelines and practices. This interdisciplinary group can also evaluate and respond to changes in the EN process, process failures, and data and outcome measures to continually improve the process to ensure safety and effectiveness.

Question 12.3. What is the role of clinical decision support in the EN order and review process?

Practice Recommendations

1. Use clinical decision support tools in guiding safe EN prescribing.
2. Develop and implement procedures for the EN order review process.

Rationale

The EHR provides the opportunity to use computerized clinical decision support (CDS) to guide accurate prescribing. CDS involves the use of alerts, algorithms, and rule-based recommendations to guide ordering. The impact of CDS is controversial. Shojania and colleagues⁵ conducted a review of studies that evaluated the effect of computer reminders on processes or outcomes of care. Their goal was to determine the degree to which computer reminders changed provider behavior. They found that computer reminders delivered to physicians during routine electronic ordering achieved only small to modest improvement in care, with a median improvement of 4.2%. The authors concluded that these changes fall below thresholds that would be considered clinically significant and “constitute an expensive exercise in trial and error.” Schedlbauer et al⁶ performed a systematic review of alerts and other reminders and prompts to evaluate the impact on prescribing behavior. They evaluated 27 different types of alerts and prompts and found that 23 of 27 resulted in a significant improvement in prescribing behavior and/or reduction in medication errors, and many of the alerts and prompts were clinically relevant. The authors concluded that most of the studies that evaluated the impact of computerized CDS systems show positive and significant effects. Although these studies specifically target medication prescribing, the EN process parallels the medication management process and therefore the study findings are relevant to EN.

Question 12.4. What organizational quality control processes need to be implemented for EN safety?

Practice Recommendations

1. Develop and implement enteral feeding algorithms to improve the provision of nutrition and possibly reduce length of stay and mortality.
2. Develop organizational guidelines that address safe enteral practices collaboratively by a multidisciplinary team.
3. Disseminate the organizational guidelines by interactive communication/education methods utilizing individuals with nutrition expertise.
4. Monitor the EN process for safety and effectiveness.
5. Promote active involvement by members of the nutrition service in the development of electronic EN orders and clinical documentation to optimize safe and effective electronic communication.

Rationale

In a multicenter, cluster-randomized trial, Martin and colleagues⁷ demonstrated that the implementation of evidence-based algorithms for nutrition support improved the provision of nutrition support, reduced hospital length of stay, and may decrease hospital mortality in critically ill patients in both community and teaching hospitals. Along with initiation of nutrition support algorithms, other strategies were used to improve the effectiveness of nutrition support care, including educational sessions, educational outreach, and audit with feedback. Guidelines alone are not adequate; they must be supported by professional collaboration, education, and effective communication strategies. In a review, Marshall and colleagues⁸ identified factors that influence nursing nutrition practice around EN and how these factors contribute to variations in practice. Evidence-based guidelines were found to be important, but EN guidelines were often lacking strong recommendations and evidence related to nursing-specific practice, which limited their usefulness. To increase use of guidelines and effectively apply these standards to clinical care, the authors recommend that the implementation of guidelines be combined with contributions from resource personnel who have nutrition and clinical expertise. They emphasize that if the intent is to use guidelines to standardize and improve practice, the information is best delivered using strong communication strategies that incorporate social interaction as a component of this knowledge transfer. The authors also support an interdisciplinary, collaborative approach where professionals from different disciplines (namely, dietitians, nurses, and physicians) function in a supportive organizational environment that includes integrated and cohesive care and symmetrical power. This multidisciplinary team can collaborate in nutrition-related practice, education, and research.

Standardization of EN orders in the EHR is another avenue for supporting a safe EN process. Since the passage of the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009, hospitals have been implementing EHR at increasing rates. Successful implementation of an EHR requires input from the clinicians who will use the EHR to provide patient care regarding how the EHR can be built and implemented to maximize patient care and avoid harm to patients. The safety and efficacy of nutrition and nutrition support content in EHR were the focus of a study that surveyed members of ASPEN. This survey indicated that most respondents (85.9%) were using an EHR, with the most common duration of use between 5 and 10 years. The results demonstrated a significant need for improvement in the safety and effectiveness of the nutrition and nutrition support content of the EHRs, with an overall rating of fair for this content (ratings ranged from unacceptable to excellent). The authors conclude that nutrition support content needs improvement and that nutrition support clinicians need to be actively involved in content development and optimization.⁹

Question 12.5. What competencies need to be maintained by clinicians involved in the EN process?

Practice Recommendations

1. Use discipline-specific standards and available competencies from professional organizations to create job descriptions for all clinicians involved in the EN process.
2. Encourage nutrition support clinicians involved in the EN process to be board certified by one of the accredited certifying organizations.
3. Develop at the healthcare organizational level competency evaluations that measure EN core elements and knowledge for all clinicians involved in the EN process.

Rationale

Given the complexity and scope of the EN process, each organization needs an oversight structure, which may reside within a standing committee. This group is uniquely qualified to oversee the EN process. In addition, all clinicians involved in the EN process must be competent and receive ongoing education/training to ensure safe and effective care. Education and competencies set by nutrition-related professional organizations are also important. For example, the standards of practice (SOP) and standards of professional performance (SOPP) for registered dietitian nutritionists (RDNs) in nutrition support have been developed by the American Society for Parenteral and Enteral Nutrition and the Academy of Nutrition and Dietetics.¹⁰ These standards outline the competencies needed for dietitians to provide nutrition support care,

including EN. Similar standards are available for other clinicians involved in the EN process.¹¹⁻¹³ Board certification in nutrition support is highly desirable for those involved in the EN process. For example, the National Board of Nutrition Support Certification (NBNSC) certification examination validates that clinicians (dietitians, nurses, pharmacists, physicians, and physician assistants) have attained the threshold of skills and knowledge necessary to provide quality nutrition support care. Additional board certification processes are available for some of these healthcare professionals. Surveys of nutrition support professionals indicate that board certification is critical to providing safe and effective care to patients.¹⁴ Brody and colleagues¹⁵ conducted a survey of healthcare professionals affiliated with ASPEN and used a case-based scenario based on established clinical guidelines to evaluate knowledge of nutrition support practices. More than half of the respondents were board certified by NBNSC, and the results indicated that those holding the certification were significantly more likely to choose correct answers compared to those without the credential. Although a certification examination cannot guarantee patient safety, it can help ensure patient safety by identifying those individuals who can demonstrate knowledge through a standardized validated board certification process.¹⁵

Question 12.6. What essential EN administration and monitoring components should be documented by nursing staff and at what interval should EN clinical documentation occur?

Practice Recommendations

1. Document interruptions to enteral feedings, including reason and length of interruption; this is best done by the nursing staff.
2. Document HOB elevation, date/time of administration start and tubing changes, and residuals for gastric feedings at each shift.
3. Document amount, type, frequency, and rate of feeding; patient's response to tube feeding; abdominal assessment; patency of the tube; condition of the skin at tube site if placed in abdominal wall; amount of any additional water; flush volume, frequency, and rate; and patient and family education.
4. Record intake and output, weights, and methods used to verify placement of an EAD.
5. Complete the nursing documentation of EN at each shift or with any change in condition or order.

Rationale

Documentation of nursing care related to EN administration and monitoring is critical to a safe EN process and can be supported by protocols and evidence-based guidelines.²

HOB elevation, the time/date of EN administration, and residuals are common nursing documentation standards. According to Mosby's Nursing Skills,¹⁶ the following documentation is also recommended: amount, type, frequency, and rate of feeding; patient's response to tube feeding; abdominal assessment; patency of tube; condition of the skin at tube site if placed in abdominal wall; amount of any additional water; flush volume, frequency, and rate; and patient and family education.

Topics for Future Research

- How well does documentation at each step of the EN process identify opportunities for safety improvement
- Data on clinical decision support systems and EN prescribing and safety

References

1. Wakeham M, Christensen M, Manzi J, et al. Registered dietitians making a difference: early medical record documentation of estimated energy requirements in critically ill children is associated with higher daily energy intake and with use of the enteral route. *J Acad Nutr Diet*. 2013;13(10):1311-1316.
2. Kim H, Stotts NA, Froelicher ES, Engler MM, Porter C. Why patients in critical care do not receive adequate enteral nutrition? A review of the literature. *J Crit Care*. 2012;27:702-713.
3. Gentles E, Mara J, Diamantidi K, et al. Delivery of enteral nutrition after the introduction of practice guidelines and participation of dietitians in pediatric critical care clinical teams. *J Acad Nutr Diet*. 2014;14(12):1974-1980.
4. Geukers V, Neef M, Dijsselhof M, Sauerwein H, Bos A. Effect of a nurse-driven feeding algorithm and the institution of a nutritional support team on energy and macronutrient intake in critically ill children. *e-SPEN J*. 2012;7(1):e35-e40.
5. Shojania KG, Jennings A, Mayhew A, Ramsay C, Eccles M, Grimshaw J. Effect of point-of-care computer reminders on physician behavior: a systematic review. *CMAJ*. 2010;182(5):216-225.
6. Schedlbauer A, Prasad V, Mulvaney C, et al. What evidence supports the use of computerized alerts and prompts to improve clinicians' prescribing behavior? *JAMA*. 2009;16(4):531-538.
7. Martin C, Doig G, Heyland D, Morrison T, Sibbald W. Multicentre, cluster-randomized clinical trial of algorithms for critical-care enteral and parenteral therapy (ACCEPT). *CMAJ*. 2004;170(2):197-204.
8. Marshall AP, Cahill NE, Gramlich L, MacDonald G, Alberda C, Heyland DK. Optimizing nutrition in intensive care units: empowering critical care nurses to be effective agents of change. *AJCC*. 2012;21(3):186-194.
9. Vanek V. Providing nutrition support in the electronic health record era: the good, the bad and the ugly. *Nutr Clin Pract*. 2012;27:718-737.
10. Brantley SL, Russell MK, Mogensen KM, et al. American Society for Parenteral and Enteral Nutrition and Academy of Nutrition and Dietetics revised 2014 standards of practice and standards of professional performance for registered dietitian nutritionists (competent, proficient, and expert) in nutrition support. *Nutr Clin Pract*. 2014;29:792-828.
11. Mascarenhas MR, August DA, DeLegge MH, et al. Standards of practice for nutrition support physicians. *Nutr Clin Pract*. 2012;27(2):295-299.
12. Tucker A, Ybarra J, Bingham A, et al. A.S.P.E.N. standards of practice for nutrition support pharmacists. *Nutr Clin Pract*. 2015;30:139-146.
13. DiMaria-Ghalili RA, Gilbert K, Lord L, et al. Standards of nutrition care practice and professional performance for nutrition support and generalist nurses. *Nutr Clin Pract*. 2016;31(4):527-547.
14. Materese LE, Chinn RN, Hertz NR, Callahan P, Harvey-Banchik L, Strang B. Practice analysis of nutrition support professionals: evidence-based multidisciplinary nutrition support certification examination. *JPEN J Parenter Enteral Nutr*. 2012;36(6):663-670.
15. Brody R, Hise M, Fleisch Marcus A, Harvey-Banchik L, Matarese L. Evaluating evidence-based nutrition support practice among healthcare professionals with and without the certified nutrition support clinician credential. *JPEN J Parenter Enteral Nutr*. 2016;40(1):107-114.
16. Mosby's Skills. Enteral nutrition via nasogastric, gastrostomy, or jejunostomy tube. <http://mns.elsevierperformancemanager.com/NursingSkills>. Accessed June 1, 2015.

Conclusion

The EN process consists of numerous steps involving several disciplines that perform a number of specific tasks at each step. These daily responsibilities are critical to ensuring safe care of the patient requiring EN therapy. Given the potential risk for error in the systems within which EN is used, ongoing systematic surveillance, critical process and outcome evaluation, and quality improvements will support patient safety. Organizations can incorporate into their system of care the best practice recommendations within this document, to support a culture of safety, by applying an interdisciplinary approach in an accommodating administrative structure.